



**Texas State Soil and Water Conservation Board
Clean Water Act §319(h) Nonpoint Source Grant Program
FY 2016 Workplan 16-06**

SUMMARY PAGE						
Title of Project	Continuation of Surface Water Quality Monitoring to Support the Implementation of the Lampasas River Watershed Protection Plan					
Project Goals	<ul style="list-style-type: none">• Generate data of known and acceptable quality for surface water quality monitoring of the mainstem and select tributaries on the Lampasas River.• Support the implementation of the Lampasas River WPP by collecting water quality data for use in evaluating the effectiveness of BMPs and assessing water quality improvement.• Communicate water quality conditions to the public and the Lampasas River Watershed Partnership Steering Committee in order to support adaptive management of the Lampasas River WPP and to expand public knowledge of Lampasas river water quality data.					
Project Tasks	(1) Project Administration; (2) Quality Assurance; (3) Water Quality Data Collection and Analysis; (4) Maintain Stakeholder Communication					
Measures of Success	<ul style="list-style-type: none">• Data of known and acceptable quality are generated for surface water quality monitoring of mainstem and tributary stations in the Lampasas River watershed• Water quality data is communicated to the public and the Partnership• Increased watershed stewardship among Lampasas River watershed stakeholders					
Project Type	Implementation (X); Education (X); Planning (); Assessment (); Groundwater ()					
Status of Waterbody on 2014 Texas Integrated Report	Segment ID 1217D North Rocky Creek (unclassified water body)		Parameter of Impairment or Concern Depressed dissolved oxygen		Category 5c	
Project Location (Statewide or Watershed and County)	Lampasas River Watershed in Bell, Burnet, Coryell, Hamilton, Lampasas, Mills, and Williamson Counties					
Key Project Activities	Hire Staff (); Surface Water Quality Monitoring (X); Technical Assistance (); Education (); Implementation (); BMP Effectiveness Monitoring (); Demonstration (); Planning (); Modeling (); Bacterial Source Tracking (); Other ()					
2012 Texas NPS Management Program Reference	<ul style="list-style-type: none">• Component 1 LTGs 1, 2, 3, 7• Component1 STGs 1B, 1E, 3A, 3F					
Project Costs	Federal	\$207,498	Non-Federal	\$138,315	Total	\$345,813
Project Management	<ul style="list-style-type: none">• Texas A&M AgriLife Research					
Project Period	October 1, 2016 – September 30, 2019					

Part I – Applicant Information

Applicant							
Project Lead		Raghavan Srinivasan, Ph.D.					
Title		Professor					
Organization		Texas A&M AgriLife Research – Blackland Research and Extension Center					
E-mail Address		r-srinivasan@tamu.edu					
Street Address		720 E. Blackland Rd.					
City	Temple	County	Bell	State	Texas	Zip Code	76502
Telephone Number		(979) 845-5069			Fax Number		(979) 862-2607

Project Partners	
Names	Roles & Responsibilities
Texas State Soil and Water Conservation Board (TSSWCB)	Provide state oversight and management of all project activities and ensure coordination of activities with related projects and TCEQ.
Texas A&M AgriLife Research – Blackland Research and Extension Center (AgriLife Research)	Provide project administration and reporting, coordination, data and analysis review, assistance for stakeholder relations, and technology transfer to the Lampasas River Watershed Partnership. Develop project final report.
Texas Institute for Applied Environmental Research (TIAER)	Provide water quality sampling and analysis for testing sites. Assist in coordinating water quality sampling efforts. Provide QAPP development and support.
Lampasas River Watershed Partnership (Partnership)	Collaborate as critical local stakeholders and play a lead role in communicating with other local stakeholders.

Part II – Project Information

Project Type							
Surface Water	X	Groundwater					
Does the project implement recommendations made in (a) a completed WPP, (b) an adopted TMDL, (c) an approved I-Plan, (d) a Comprehensive Conservation and Management Plan developed under CWA §320, (e) the <i>Texas Coastal NPS Pollution Control Program</i> , or (f) the <i>Texas Groundwater Protection Strategy</i> ?				<table border="1"> <tr> <td>Yes</td> <td>X</td> <td>No</td> </tr> </table>	Yes	X	No
Yes	X	No					
If yes, identify the document.		Lampasas River Watershed Protection Plan					
If yes, identify the agency/group that developed and/or approved the document.		The Lampasas River Watershed Partnership facilitated by Texas A&M AgriLife Research and TSSWCB	Year Developed	2013			

Watershed Information				
Watershed or Aquifer Name(s)	Hydrologic Unit Code (12 Digit)	Segment ID	Category on 2012 IR	Size (Acres)
Lampasas River (Lampasas River above Stillhouse Hollow Lake, Rocky Creek, Sulphur Creek, Simms Creek)	120702030101 – 120702030509	1217 1217D 1217B 1217C	2 5c 5b 2	839,800

Water Quality Impairment
Describe all known causes (i.e., pollutants of concern) and sources (e.g., agricultural, silvicultural) of water quality impairments or concerns from any of the following sources: <i>2014 Texas Integrated Report</i> , Clean Rivers Program Basin Summary/Highlights Reports, or other documented sources.
<p>2012 Integrated Report North Rocky Creek (1217D) is listed as impaired for depressed DO.</p> <p>2013 BRA CRP Basin Highlights Report Lampasas River Above Stillhouse Hollow Lake (Segment 1217) The Lampasas River above Stillhouse Hollow Lake has no impairment; however the portion of the segment from the confluence with Mesquite Creek in Lampasas County to the confluence with Lucy Creek (1217_02) has a concern for macrobenthic community. Sulphur Creek (Segment 1217B) Sulphur Creek has a concern for the macrobenthic community in the portion of Sulphur Creek from the confluence with the Lampasas River to the confluence with Burleson Creek in the City of Lampasas (1217B_01). The remaining portion of the creek to the confluence with Donaldson Creek and Espy Branch (1217B_02) is impaired for low dissolved oxygen. Low dissolved oxygen is likely a result of anoxic groundwater influx from the many springs that feed in to the stream. North Rocky Creek (Segment 1217D) North Rocky Creek is impaired for depressed DO. This DO impairment is caused by frequent low water levels which hinder its ability to buffer against high ambient air temperatures in the summer and fall reducing the water's capacity to maintain DO levels. A TMDL project was initiated in 2002 to address the impairment. Biological data collected indicated that North Rocky Creek supports a relatively healthy biological community even with depressed DO levels. The TCEQ's Water Quality Standards program reviewed data from North Rocky Creek and determined that site-specific criterion for DO would be appropriate. The 2010 TCEQ Water Quality Standards assigned North Rocky Creek site-specific criteria for 24-hr dissolved oxygen. With additional data collection and assessment against the new criteria, North Rocky Creek may be removed from the impaired list going forward.</p>

Project Narrative

Problem/Need Statement

The Lampasas River (segment 1217) rises in eastern Mills County, 16 miles west of Hamilton and flows southeast for 75 miles. The river courses through Hamilton, Lampasas, Burnet and Bell Counties. In Bell County the river turns northeast and is dammed five miles southwest of Belton to form Stillhouse Hollow Lake (Segment 1216). Below Stillhouse Hollow Lake, the Lampasas River flows to its confluence with Salado Creek and the Leon River to form the Little River.

According to the 2002, 2004, 2006 and 2008 Texas Water Quality Inventory and 303(d) List, the Lampasas River above Stillhouse Hollow Lake is impaired by elevated bacteria concentrations and did not meet Texas Surface Water Quality Standards for contact recreation. However, the Lampasas River was not listed as impaired on the 2014 Integrated Report. A portion of the river was delisted on the 2010 Integrated Report because no additional data had been collected for assessment from 2000 until late 2009 and existing historical data no longer met TCEQ's criteria to be included in assessment.

Prior to the river's delistment, Texas A&M AgriLife Research and TSSWCB established the Lampasas River Watershed Partnership in November 2009 as part of TSSWCB project 07-11, *Lampasas River Watershed Assessment and Protection Project*. This project updated land use, modeled water quality, and developed a WPP to address the bacteria impairment. With technical assistance from Texas A&M AgriLife Research and other state and federal partners, the Steering Committee identified water quality issues that are of particular importance to the surrounding communities. The WPP identified responsible parties, implementation milestones and estimated financial costs for individual management measures and outreach and education activities. The plan also described the estimated load reductions expected from full implementation of all management measures.

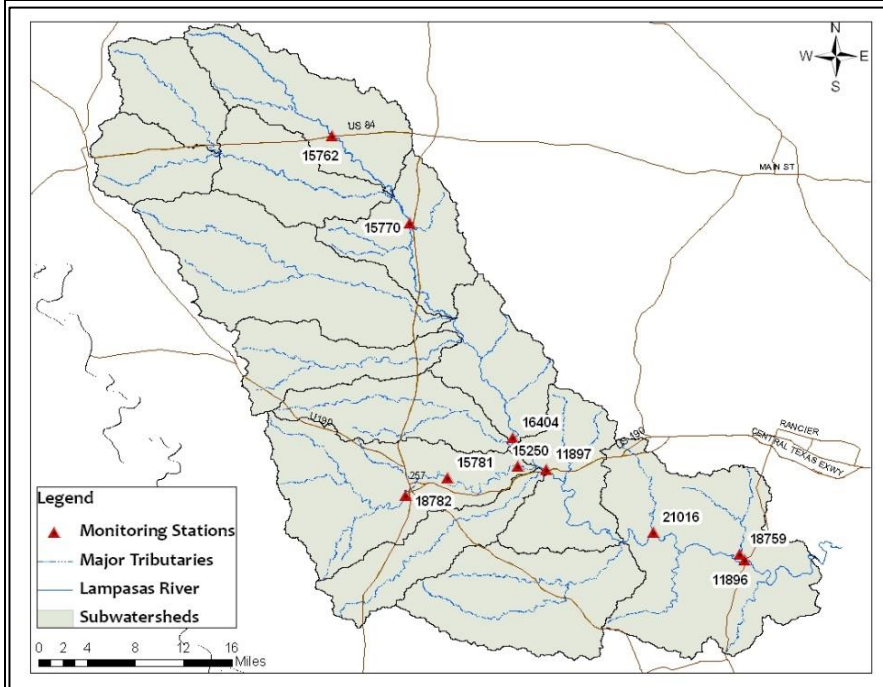
TSSWCB project 12-09, *Coordinating Implementation of the Lampasas River Watershed Protection Plan* and project 14-07, *Continued Coordinating Implementation of the Lampasas River Watershed Protection Plan*, continue facilitation of the Lampasas River WPP. The WPP was accepted by EPA in May 2013 as being consistent with national guidance and was approved by the Steering Committee in September 2013 and may be found on the project webpage at <http://www.lampasasriver.org>. The timeline for full implementation of all the management measures in the Lampasas River WPP is 10 years.

In addition to the TSSWCB identified above, several other programs that are being implemented in the watershed. TSSWCB 12-06, *Statewide Delivery of Lone Star Healthy Streams Feral Hog Component and Providing Technical Assistance on Feral Hog Management in Priority Watersheds* provides resources to the stakeholders in the Lampasas River watershed in the form of a local feral hog specialist to assist landowners with feral hog control. TSSWCB project 14-06 provides technical and financial assistance to landowners to develop and implement Water Quality Management Plans. TSSWCB project 13-09, *Surface Water Quality Monitoring to Support the Implementation of the Lampasas River Watershed Protection Plan* currently collects monthly water quality data at ten sites to be utilized in evaluating the effectiveness of BMPs in the watershed. Project 13-09 will conclude its sampling program in June 2016. This project will provide continued support to collect surface water quality data within the watershed once sampling has ended in project 13-09 and will allow for a continuous dataset with no gaps.

The stakeholders of the Lampasas River Watershed Partnership feel that maintaining a continuous monitoring program is crucial to the success of the WPP. To date, there have been seven completed or ongoing CWA 319(h) projects to assess, monitor or improve water quality through education or implementation in the watershed. This project will provide critical water quality data that will be used to measure the effectiveness of WPP implementation efforts and serve as a tool to quantitatively measure water quality restoration.

Project Narrative

General Project Description (Include Project Location Map)



TIAER will conduct routine ambient monitoring at 10 sites monthly collecting field, conventional, flow and bacteria parameter groups. The 10 sites have already been identified by the Partnership as shown in Table 1 and Figure 1. The sampling period will extend over 24 months with a total number of sample events scheduled being 240. Spatial and seasonal variations will be captured across the sampling period.

TIAER will conduct biased flow monitoring at the 10 sites listed in Table 1 once per quarter/season under wet weather conditions, collecting field, conventional, flow and bacteria parameter groups. If a routine sampling event happens to capture wet weather conditions, an additional wet weather sample will not be collected that quarter. It is expected that no more than 70 biased flow samples will be collected over 7 quarters/seasons. Spatial, seasonal and

Figure 1 Map of water quality monitoring stations recommended by the Lampasas River Watershed Partnership to evaluate the effectiveness of BMP implementation.

meteorological variation will be captured across the sampling period. TIAER will also conduct 5 24-hour dissolved oxygen (DO) sampling events on North Rocky Creek (segment 1217D) at station 18334. The 24-hour DO samples will be collected in conjunction with routine samples at other stations.

All monitoring data will be uploaded quarterly into the TCEQ SWQMIS for future water quality assessments. AgriLife Research will develop a final report that includes an assessment of water quality with respect to effectiveness of BMPs implemented, short-term progress made in achieving water quality goals stated in the WPP as well as statistical analysis to identify any trends within the dataset. AgriLife Research will communicate water quality conditions to the public and the Partnership Steering Committee in order to support adaptive management of the Lampasas River WPP and to expand public knowledge on Lampasas River water quality data.

TCEQ ID	Location	Lat	Long
15762	LAMPASAS RIVER AT US 84	31.48027	-98.2735
15770	LAMPASAS RIVER AT CR2925	31.119	-98.0565
16404	LAMPASAS RIVER AT FM 2313	30.97248	-97.7786
11897	LAMPASAS RIVER AT US 190	31.08167	-98.0164
11896	LAMPASAS RIVER AT HWY 195	30.95297	-97.7212
18782	SULPHUR CREEK AT NARUNA ROAD	31.0504	-98.1852
18781	SULPHUR CREEK AT CR 3010	31.07091	-98.1353
15250	SULPHUR CREEK AT CR 3050	31.0854	-98.0507
21016	CLEAR CREEK AT OKALLA ROAD	31.0063	-98.8887
18759	REESE CREEK NR FM 2670 BR985	30.9793	-97.7847

Tasks, Objectives and Schedules						
Task 1	Project Administration					
Costs	Federal	\$72,637	Non-Federal	\$76,985	Total	\$149,622
Objective	To effectively administer, coordinate and monitor all work performed under this project including technical and financial supervision and preparation of status reports.					
Subtask 1.1	AgriLife Research will prepare electronic quarterly progress reports (QPRs) for submission to the TSSWCB. QPRs shall document all activities performed within a quarter and shall be submitted by the 15 th of January, April, July and October. QPRs shall be distributed to all Project Partners.					
	Start Date	Month 1		Completion Date	Month 36	
Subtask 1.2	AgriLife Research will perform accounting functions for project funds and will submit appropriate Reimbursement Forms to TSSWCB at least quarterly.					
	Start Date	Month 1		Completion Date	Month 36	
Subtask 1.3	AgriLife Research will host coordination meetings or conference calls, at least quarterly, with Project Partners to discuss project activities, project schedule, communication needs, deliverables, and other requirements. AgriLife Research will develop lists of action items needed following each project coordination meeting and distribute to project personnel.					
	Start Date	Month 1		Completion Date	Month 36	
Subtask 1.4	AgriLife Research will develop a Final Report that summarizes activities completed and conclusions reached during the project and discusses the extent to which project goals and measures of success have been achieved.					
	Start Date	Month 25		Completion Date	Month 36	
Deliverables	<ul style="list-style-type: none">QPRs in electronic formatReimbursement Forms and necessary documentation in hard copy formatFinal Report in electronic and hard copy formats					

Tasks, Objectives and Schedules						
Task 2	Quality Assurance					
Costs	Federal	\$4,534	Non-Federal	\$3,212	Total	\$7,746
Objective	To develop data quality objectives (DQOs) and quality assurance/control (QA/QC) activities to ensure data of known and acceptable quality are generated through this project.					
Subtask 2.1	TIAER will develop a QAPP for activities in Task 3 consistent with the most recent versions of <i>EPA Requirements for Quality Assurance Project Plans (QA/R-5)</i> and the <i>TSSWCB Environmental Data Quality Management Plan</i> . All monitoring procedures and methods prescribed in the QAPP shall be consistent with the guidelines detailed in the <i>TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods for Water, Sediment, and Tissue (RG-415)</i> and <i>Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data (RG-416)</i> . [Consistency with Title 30, Chapter 25 of the Texas Administrative Code, <i>Environmental Testing Laboratory Accreditation and Certification</i> , which describes Texas’ approach to implementing the National Environmental Laboratory Accreditation Conference (NELAC) standards, shall be required where applicable.]					
	Start Date	Month 1		Completion Date	Month 6	
Subtask 2.2	TIAER will implement the approved QAPP. TIAER will submit revisions and necessary amendments to the QAPP as needed.					
	Start Date	Month 6		Completion Date	Month 36	
Deliverables	<ul style="list-style-type: none">QAPP approved by TSSWCB and EPA in both electronic and hard copy formatsApproved revisions and amendments to QAPP, as neededData of known and acceptable quality as reported through Task 3					

Tasks, Objectives and Schedules						
Task 3	Water Quality Data Collection and Analysis					
Costs	Federal	\$107,804	Non-Federal	\$55,020	Total	\$162,824
Objective	To provide data of known and acceptable quality for surface water quality monitoring of mainstem and tributary stations of the Lampasas River.					
Subtask 3.1	TIAER will conduct routine ambient monitoring at 10 sites monthly collecting field, conventional, flow and bacteria parameter groups. The 10 sites have been identified by the Partnership (Table 1).					
	Sampling period extends over 24 months. Total number of sample events scheduled for collection through this subtask is 240. Spatial and seasonal variation will be captured across the sampling period. Six of the monitoring sites are currently monitored quarterly by either TCEQ or BRA through the Clean Rivers Program. TIAER will coordinate with these entities so as not to duplicate sampling dates.					
	TIAER’s Laboratory will maintain NELAC accreditation and conduct sample analyses. Field parameters are pH, temperature, dissolved oxygen and specific conductance. Conventional parameters are total suspended solids, nitrate + nitrite nitrogen, total kjeldahl nitrogen, chlorophyll-a, pheophytin and total phosphorus. Flow parameters are flow collected by gage, electric, mechanical or Doppler, including severity. <i>E. coli</i> enumeration will be done using USEPA Method 1603.					
	Start Date	Month 6		Completion Date	Month 30	
Subtask 3.2	TIAER will conduct biased-flow monitoring at 10 sites (Table 1) once per quarter/season under wet weather conditions, collecting field, conventional (with the exception of chlorophyll-a and pheophytin), flow and bacteria parameter groups. These sites shall be the same as the sites for routine ambient monitoring described in Subtask 3.1. If a storm event was captured under routine monitoring in subtask 3.1, a separate biased flow sample will not be collected under this subtask. Specific parameters are defined in subtask 3.1.					
	The sampling period extends through 7 quarters/seasons. The number of samples planned for collection through this subtask is 70. Spatial, seasonal and meteorological variation will be captured across the sampling period.					
	Samples will be analyzed at TIAER’s Laboratory.					
	Start Date	Month 6		Completion Date	Month 30	
Subtask 3.3	TIAER will conduct 5 24-hour dissolved oxygen (DO) sampling events on North Rocky Creek (segment 1217D) at station 18334. The 24-hour DO samples will be collected in conjunction with routine samples collected in Task 3.1. The specific timing of the sampling events will be done per the guidelines found in Chapter 3 of the Surface Water Quality Monitoring Procedures, Vol. 1(revised August 2012).					
	Start Date	Month 18		Completion Date	Month 30	
Subtask 3.4	Monitoring data from activities in subtasks 3.1-3.3 will be uploaded into the TCEQ SWQMIS at least quarterly. Data will be transferred in the correct format using the TCEQ file structure along with a completed Data Summary, as described in the most recent version of the TCEQ Surface Water Quality Monitoring Data Management Reference Guide. TIAER will submit Station Location Requests to TCEQ, as needed, to obtain TCEQ station numbers for new monitoring sites. Data Correction Request Forms will be submitted to TSSWCB whenever errors are discovered in data already reported. All monitoring data files, data summary reports and data correction request forms will also be provided to AgriLife Research. TIAER will input monitoring regime, as detailed in the QAPP, into the TCEQ CMS.					
	Start Date	Month 6		Completion Date	Month 36	

Subtask 3.5	AgriLife Research will summarize water quality data collected in subtasks 3.1 and 3.2 and conduct statistical and trend analysis to evaluate the effectiveness of BMPs implemented which will be included in the Report developed in subtask 1.4.		
	Start Date	Month 25	Completion Date
Deliverables	<ul style="list-style-type: none"> Station Location Request Forms (as needed) in electronic format Monitoring data files and Data Summary in electronic format Data correction request forms (as needed) in electronic format 		

Tasks, Objectives and Schedules						
Task 4	Maintain Stakeholder Communication					
Costs	Federal	\$22,523	Non-Federal	\$3,098	Total	\$25,621
Objective	To maintain stakeholder engagement through stakeholder meetings during the implementation of the watershed protection plan as water quality data is collected.					
Subtask 4.1	AgriLife Research will host and facilitate meetings of the Partnership as appropriate in order to communicate project goals, activities and achievements, and movement towards water quality restoration.					
	Start Date	Month 1		Completion Date	Month 36	
Subtask 4.2	AgriLife Research will summarize the results from Task 3 to be included in the BRA’s Clean Rivers Program Basin Highlights Report and Basin Summary Report. AgriLife Research will provide updates on the results and activities of Task 3 to the Steering Committee.					
	Start Date	Month 1		Completion Date	Month 36	
Deliverables	<ul style="list-style-type: none">Schedules, agendas, meeting materials, attendance lists and meeting summaries from stakeholder meetingsSummary of findings from monitoring activities included in BRA CRP BHR and BSR in both electronic and hardcopy formats					

Project Goals (Expand from Summary Page)
<ul style="list-style-type: none"> Generate data of known and acceptable quality for surface water quality monitoring (routine ambient, targeted ambient) of mainstem and tributary stations for field and conventional parameters, flow, and bacteria Support the implementation of the Lampasas River WPP by collecting water quality data for use in evaluating the effectiveness of BMPs and in assessing water quality improvement Communicate water quality conditions to the public and to the Partnership on project results and activities in order to support adaptive management of the Lampasas River WPP and to expand public knowledge on Lampasas River water quality data

Measures of Success (Expand from Summary Page)
<ul style="list-style-type: none"> Data of known and acceptable quality are generated for surface water quality monitoring of main stem and tributary stations on Lampasas River for field and conventional parameters, flow, and bacteria Water quality data is used to evaluate progress in implementing the Lampasas River WPP Monitoring data is appropriately managed and transferred for inclusion into the TCEQ SWQMIS Water quality data is communicated to the public and the Partnership in a timely fashion

2012 Texas NPS Management Program Reference (Expand from Summary Page)
Components, Goals, and Objectives
Component 1: Explicit short- and long-term goals, objectives and strategies that protect surface and ground water
Long-Term Goals
LTG 1: Focus NPS abatement efforts, implementation strategies and available resources in watersheds identified as impacted by NPS pollution
LTG 2: Support the implementation of state, regional and local programs to prevent NPS through assessment, implementation and education
LTG 3: Support the implementation of state, regional, and local programs to reduce NPS pollution, such as the implementation of strategies defined in...WPPs
LTG 6: Increase overall public awareness of NPS issues and prevention activities
Short-Term Goals
STG 1: Data collection and assessment: Coordinate...with appropriate entities and target CWA §319(h) grant funds toward water quality assessment activities in high priority, NPS-impacted watersheds...were additional information is needed
Objective B: Ensure that monitoring procedures meet quality assurance requirements and are in compliance with EPA-approved TSSWCB QMPs
Objective E: Conduct monitoring to determine effectiveness of ...WPPs and BMP implementation as appropriate
STG 3: Education: Conduct education...to help increase awareness of NPS pollution and prevent activities contributing to the degradation of water bodies, including aquifers, by NPS pollution
Objective A: Enhance existing outreach programs at the state, regional, and local levels to maximize the effectiveness of NPS education
Objective F: Implement public outreach and education to maintain and restore water quality in waterbodies impacted by NPS pollution

EPA State Categorical Program Grants – Workplan Essential Elements
FY 2014-2018 EPA Strategic Plan Reference
Strategic Plan Goal – Goal 2 Protecting America’s Waters
Strategic Plan Objective – Objective 2.2 Protect and Restore Watersheds and Aquatic Ecosystems

Part III – Financial Information

Budget Summary			
Federal	\$	207,498	% of total project 60%
Non-Federal	\$	138,315	% of total project 40%
Total	\$	345,813	Total 100%
Category	Federal		Non-Federal
Personnel	\$	56,749	\$ 16,213
Fringe Benefits	\$	16,521	\$ 3,560
Travel	\$	6,400	\$ 0
Equipment	\$	0	\$ 0
Supplies	\$	1,000	\$ 0
Contractual	\$	109,828	\$ 73,218
Construction	\$	0	\$ 0
Other	\$	1,000	\$ 0
Total Direct Costs	\$	191,498	\$ 92,991
Indirect Costs (≤ 15%)	\$	16,000	\$ 45,324
Total Project Costs	\$	207,498	\$ 138,315

Budget Justification (Federal)		
Category	Total Amount	Justification
Personnel	\$ 56,749	Principal Investigator (\$184,853 annually)– 2.08% FTE per year (\$12,240) Project Manager (\$48,380 annually)– Year 2 @ 10% FTE (\$4,983) and Year 3 @ 15% FTE (\$7,699) Data Analyst/ Research Associate (\$60,000 annually)–Year 3 @ 50% FTE (\$31,827) * All salary estimates include an annual 3% salary increase
Fringe Benefits	\$ 16,521	TAMUS estimates at 18% of Personnel plus group health of \$647/month/FTE
Travel	\$ 6,400	Travel from Temple to the Lampasas River watershed for stakeholder engagement, (approximately 199 miles roundtrip) for an estimated 8 roundtrips/year for 3 years Travel from Temple to Stephenville for project planning, twice yearly, (approximately 214 miles roundtrip, 6 roundtrips) with overnight stays Travel from Temple to College Station for project coordination quarterly each year (approximately 171 miles roundtrip) Travel to a water quality monitoring conference or training once per project period (conference/training is assumed to be in state and estimated to be approximately 4 days/3 nights long and approximately 411 miles roundtrip) All travel will be reimbursed at @ current state rate, \$83 room night and \$46/day per diem, or actual costs, not to exceed current per diem rates for the state of Texas
Equipment	\$ 0	N/A
Supplies	\$ 1,000	Computer hardware, repair and software licensing, computer consumables, presentation and meeting supplies
Contractual*	\$ 109,828	Texas Institute of Applied Environmental Research
Construction	\$ 0	N/A
Other	\$ 1,000	Shipping/postage, professional printing of fact sheets, conference or training registration fees
Indirect	\$ 16,000	15% of Modified Total Direct Costs

Budget Justification (Non-Federal)		
Category	Total Amount	Justification
Personnel	\$ 16,213	Principal Investigator (\$184,853 annually) – Year 1 @ 2.50% FTE, Year 2@ 2.75% and Year 3@ 3.00% (Total - \$16,213) *All salary estimates include an annual 3% salary increase
Fringe Benefits	\$ 3,560	TAMUS estimates at 18% of Personnel plus group health of \$647/month/FTE
Travel	\$ 0	
Equipment	\$ 0	
Supplies	\$ 0	
Contractual*	\$ 73,218	Texas Institute of Applied Environmental Research
Construction	\$ 0	
Other	\$ 0	
Indirect	\$ 45,324	Texas A&M BREC's DHHS negotiated indirect cost rate is 48.5%. Indirect cost match at the sponsor's required rate of 15% of modified total direct cost for a total of \$35,735 in unrecovered funds and a total indirect cost of \$45,324.

Contractual Budget Justification (Federal) –TIAER		
Category	Total Amount	Justification
Personnel	\$ 45,257	See personnel table below for details. Federal portion represents about 71% of total category costs.
Fringe Benefits	\$ 15,061	Approximately 33% of federal salaries (see below for more details)
Travel	\$ 1,846	All travel assumes use of TIAER vehicles with fuel expenses: <ul style="list-style-type: none"> Trips by TIAER field staff to and from sampling sites for sample retrieval, flow measurements, and deployment and retrieval of sondes for 24-hr measurements (estimated 40 trips to sampling sites, about 250 miles per trip, 2 vehicles most trips with two separate teams). Only 60% of total Travel cost charged to federal portion of the project.
Equipment	\$ 0	N/A
Supplies	\$ 405	Field supplies and sonde probe replacement. Only 60% of total Supply costs charged to the federal portion of the project.
Contractual	\$ 0	N/A
Construction	\$ 0	N/A
Other	\$ 37,845	Lab analyses for samples (total \$63,716) and other items such as vehicle maintenance and miscellaneous charges postage and shipping. More details provided below. Only about 59% of the total Other costs will be charged to the federal portion of the project.
Indirect	\$ 9,414	Indirect charged 15% of total direct (\$100,414) minus federal cost of lab analyses of samples (\$37,653). MTDC = \$62,761.

Contractual Budget Justification (Non-Federal) – TIAER		
Category	Total Amount	Justification
Personnel	\$ 18,243	See personnel table given below for details. Non-federal portion represents about 29% of total category costs.
Fringe Benefits	\$ 4,467	Approximately 24% of non-federal salaries (see below for more details)
Travel	\$ 1,230	All travel assumes use of TIAER vehicles with fuel expenses: <ul style="list-style-type: none"> Trips by TIAER field staff to and from sampling sites for sample retrieval, flow measurements, and deployment and retrieval of sondes for 24-hr measurements (estimated 40 trips to sampling sites, about 250 miles per trip). Only 40% of total Travel cost charged to non-federal portion of the project.
Equipment	\$ 0	N/A
Supplies	\$ 270	Field supplies and sonde probe replacement. Only 40% of total Supply costs charged to the non-federal portion of the project.
Contractual	\$ 0	N/A
Construction	\$ 0	N/A
Other	\$ 26,194	Lab analyses for samples (total \$63,716) and other items such as vehicle maintenance and miscellaneous charges postage and shipping. Only about 41% of the total Other costs will be charged to the non-federal portion of the project.
Indirect	\$ 22,814	Non-federal match for indirect calculated as the difference between total and federal indirect. Total indirect calculated as 37% of modified total indirect (Tarleton State University's indirect rate). Modified total indirect for this budget equals total direct minus laboratory costs (\$150,818-\$63,716).

Detailed Budget Justification of TIAER Personnel & Fringe:

	Staff Name or Vacant	Position or Title	Avg. Annual Salary or Hourly Wage During Project*		% Time to Project ***	Total Cost to Project
Field Operations						
	Stroebel, Jeff	Research Associate	\$56,451		9.8%	\$16,596.59
	Millican, Jimmy	Sr. Research Associate	\$59,987		4%	\$7,198.44
	Martinez, Abel	Research Associate	\$49,629		8%	\$11,910.96
	Blankenship, David	Sr. Research Assistant	\$37,565		8%	\$9,015.60
	Hunt, Vickie	Technician	\$34,632		<1%	\$844.70
QA, Coordination of Field Effort, Data Management, Data Submittals						
	Easterling, Nancy	Research Associate	\$29.72/hr		4%	\$7,418.11
	Rogers, Jim	Sr. Program Analyst	\$68,182		2%	\$4,090.92
	McFarland, Anne	Research Scientist	\$107,078		2%	\$6,424.68
	* Budget assumes a salary increase of 3% per year.				Salary	\$63,500
	*** Percent time to the project will vary based on when work for tasks and subtasks occurs.					

Fringe Uses Approved Rates

18% times salary costs plus insurance rate of \$647/month (modified budget based on actual spending within the fringe category, which varies by individual).

Detailed Justification for Other:

Lab Analysis – For monitoring under Task 3 over 24 month, the budget includes 240 routine grab for conventional parameters of *E. coli*, CHLA and pheophytin, NO₂-N+NO₃-N, TKN, TP and TSS (estimated cost per sample \$215) and 70 biased-flow samples of *E. coli*, NO₂-N+NO₃-N, TKN, TP and TSS (estimated cost per sample \$172). CHLA and pheophytin will not be analyzed for biased-flow samples. *E. coli* will be analyzed per EPA method 1603. Other laboratory costs that may be charged to the project include data review, bottle preparation for sampling and extra filtration (as needed for “dirty” samples).

Vehicle maintenance – TIAER maintains its own fleet of vehicles. A small portion (about \$193) of the total budget is included in the revised budget for maintenance items, such as oil changes.